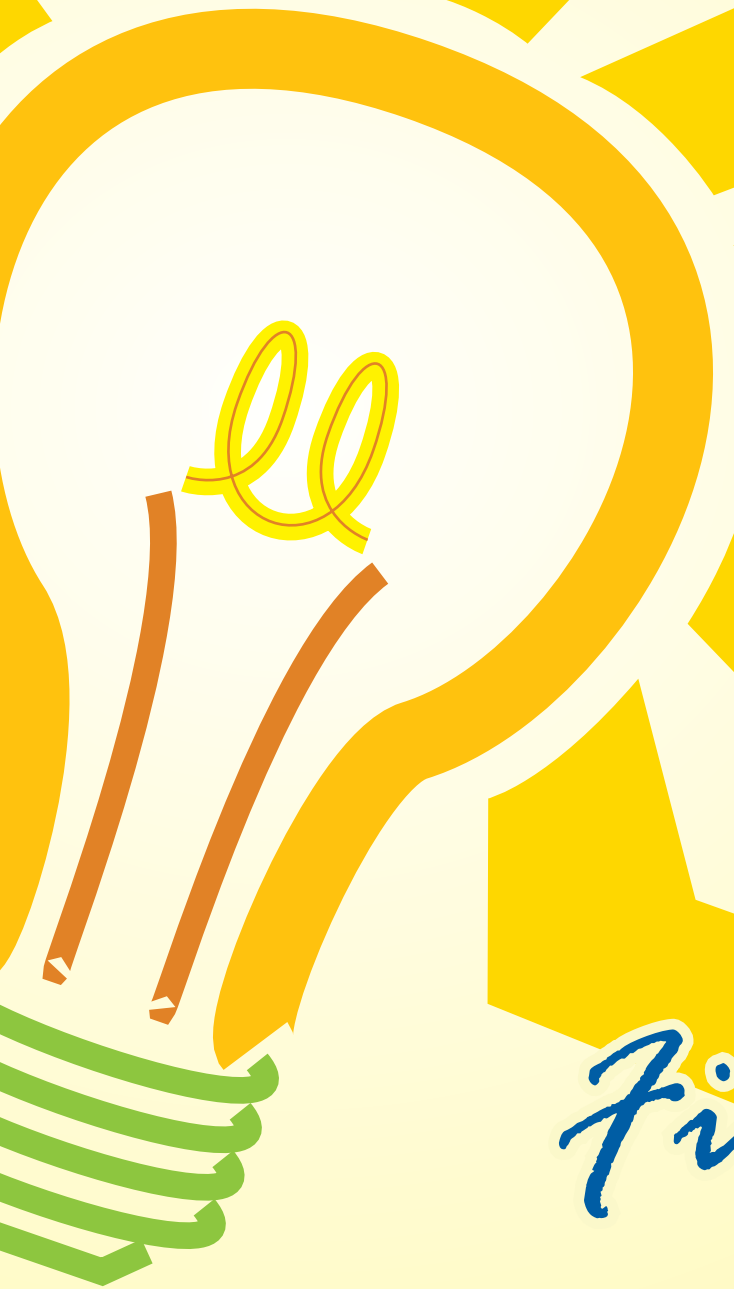


12th Annual
**Graduate Research
Symposium**

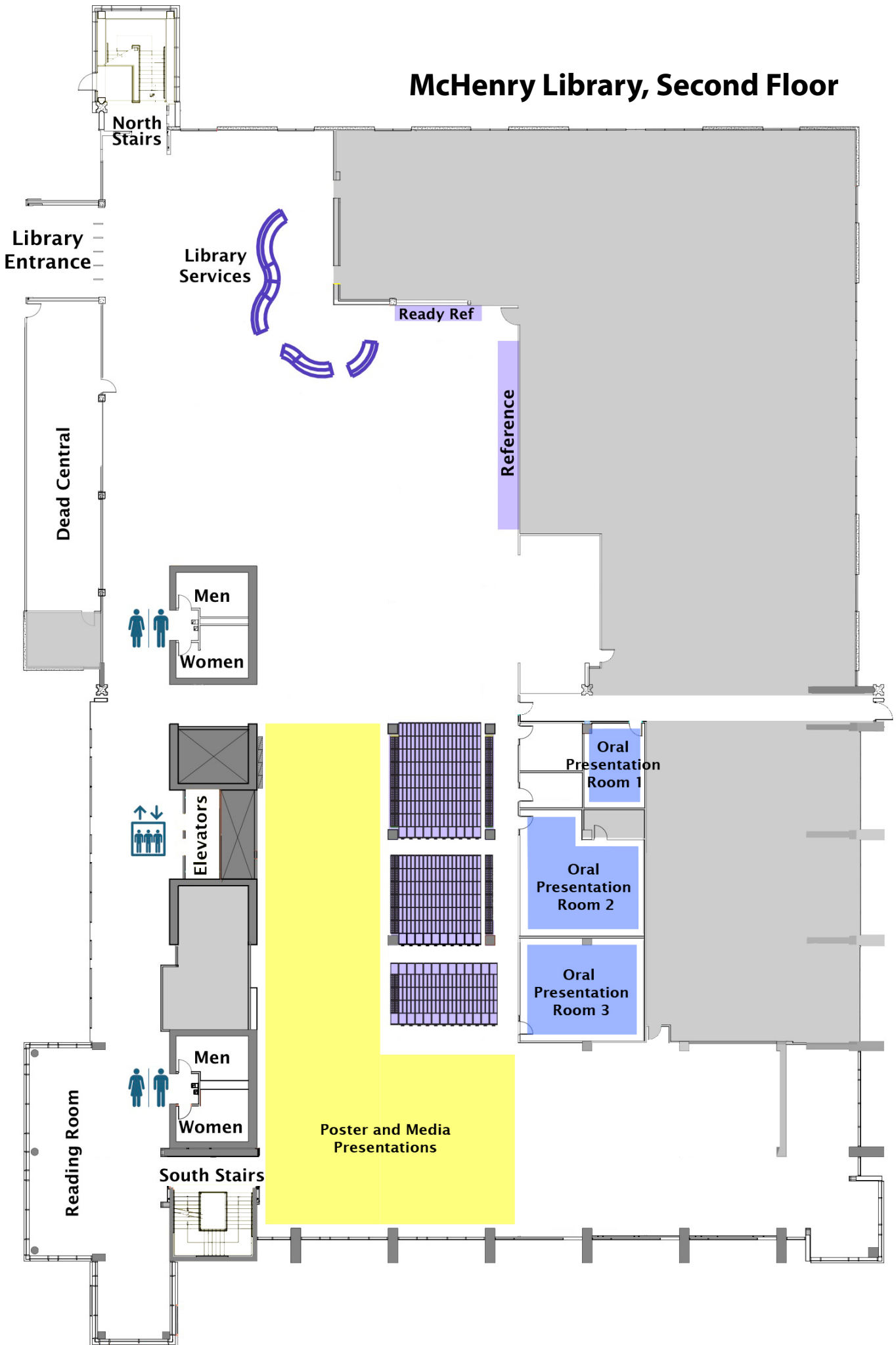
April 29, 2016



Fiat Lux!

UC Santa Cruz • Division of Graduate Studies

McHenry Library, Second Floor



Welcome to the 12th Annual Graduate Research Symposium!

UC Santa Cruz is proud to showcase the superb research of our graduate students and to celebrate their academic achievements in the past year. We're especially pleased to be able to hold this event as part of Alumni Weekend.

UCSC's annual Graduate Research Symposium gives us the opportunity to:

- Highlight the most outstanding graduate research across the whole spectrum of disciplines on our campus;
- Recognize advanced graduate research being conducted in a wide range of programs and settings;
- Celebrate the diversity and innovativeness of our graduate community;
- Provide our graduate students with the chance to learn about the research of their colleagues and to encounter research findings in fields of inquiry related to their own;
- Promote interdisciplinary research conversations among our graduate students.

The Division of Graduate Studies is honored to be able to host this annual event in the recently-renovated McHenry Library. Please use the adjacent map to find the oral, media and poster presentations listed in this program.

Event Judging

A panel of judges will score presenters on their ability to convey information in a meaningful manner to a non-expert audience, as well as the relevance/importance of their research and/or project to those in and outside of their field.

Awards Reception

Join us for the Awards Reception immediately following the Symposium on the South Lawn, where light refreshments will be provided. Awards for the best presentations in each academic division will be granted, including gift certificates to the UCSC Bookstore in the amount of \$100, sponsored by the academic Deans, and \$150, sponsored by the UCSC Alumni Association. Two awards recognizing outstanding presentations in any discipline will also be awarded: a \$250 cash Graduate Dean's award, and a \$500 cash award for the Chancellor's Graduate Research Prize.

Graduate Alumni Social

In celebration of Alumni Weekend, a Graduate Alumni Social will be held at the Graduate Student Commons following the Symposium. Please see the walking map on the back page of this program for directions to the GSC. Graduate Alumni and current graduate students are encouraged to come make new friends, reconnect with old friends, and learn more about the GSC while enjoying a refreshing cocktail. Drinks and appetizers will be provided.



Tyrus Miller
Vice Provost and Dean of Graduate Studies

Acknowledgements

Thank you to all who contributed to the success of this event...

All of our volunteer judges
McHenry Library, *Event Sponsor*
Alumni Association, *Event Sponsor*
Division of Arts, *Event Sponsor*
Baskin School of Engineering, *Event Sponsor*
Division of Humanities, *Event Sponsor*
Division of Physical & Biological Sciences, *Event Sponsor*
Division of Social Sciences, *Event Sponsor*
Marcus Thayer and Team, McHenry Library, *Location Assistance and Publicity*
Traci Takaguchi and Team, *UCSC Catering Services*
Robert Kemp and Team, Staff Receiving Services, *Poster Easels*
Juan Perez and Team, Learning Technologies, *Media Support*
Karen Herrera, Diana Rivas and Dan Oliver, *Event Assistance*
University Relations, *Publicity and Marketing*
Transportation and Parking Services (TAPS), *Parking Assistance*

Media Presentation

Grace Barcheck, *Earth Sciences*
THE HEARTBEAT OF AN ICE SHEET: TURNING SCIENCE INTO SOUND
FROM THE WHILLANS ICE STREAM IN WEST ANTARCTICA

Oral/Live Presentations

Presentation Room 1
Library 2320

1:30 pm

Jess Whatcott, *Politics*

THE POLITICS OF INFORMED CONSENT IN CALIFORNIA WOMEN'S PRISONS

Eric Fischer, *Economics*

MONETARY SURPRISES, PORTFOLIO FLOWS, AND LIQUIDITY:
A CASE STUDY OF BRAZIL, COLOMBIA, AND MEXICO

Jeremy Coupe, *Computer Engineering*

COMPUTING THE OPTIMAL RAMP AREA AIRCRAFT PUSH BACK TIME WINDOWS
IN THE PRESENCE OF UNCERTAINTY

Larissa Marinho Eglem de Oliveira, *Computer Engineering*

CHARACTERIZING USER MOBILITY IN WIFI NETWORKS

Damla Ozcelik, *Electrical Engineering*

SPATIALLY MULTIPLEXED BIOPARTICLE DETECTION
USING MULTIMODE INTERFERENCE

2:30 pm

Ben Spalding, *Digital Arts & New Media*

HYDRAS LIKE STORIES: MULTI-PLAYER NARRATIVE DESIGN IN DIGITAL GAMES

Joshua Parks, *Electrical Engineering*

DIRECT INTEGRATION OF ACTIVE OPTOFLUIDIC ELEMENTS
WITH CONVENTIONAL MICROFLUIDICS

Mike Jaris, *Electrical Engineering*

ULTRAFAST SPECTROSCOPY OF NANOSCALE SPINTRONIC DEVICES

Carver Bierson, *Earth Sciences*

DEEP INSIGHTS FROM SIMPLE OBSERVATIONS OF PLUTO AND CHARON

Michael Nayak, *Earth Sciences*

THE EVOLUTION OF GROOVES ON PHOBOS:
FROM SUSPECTED ALIEN MONOLITH TO SESQUINARY IMPACT FEATURES

Oral/Live Presentations

Presentation Room 2
Library 2353

1:30 pm

Jackson Tolins, *Psychology*

LISTENING TO THE LISTENER: THE ROLE OF ADDRESSEE BACKCHANNELS
IN DIALOGUE COMPREHENSION

Mecaila Smith, *Education*

PERSONAL STATEMENTS IN COMPETITIVE ENVIRONMENTS:
INQUIRY INTO AUTHORSHIP USING SOCIOCULTURAL THEORIES OF IDENTITY
AND THE LENS OF DIALOGISM

Mary Thomas, *Visual Studies*

SOCIALLY-ENGAGED ART HISTORY:
MOVING VISUAL ANALYSIS OUTSIDE OF THE CLASSROOM

Talia Waltzer, *Psychology*

WHEN AND WHY IS IT WRONG TO COPY FROM OTHERS?
VARIABILITY IN STUDENTS' EVALUATIONS OF PLAGIARISM

Alix Johnson, *Anthropology*

THE CENTER FOR EMERGING WORLDS:
PUBLIC-ACADEMIC ENGAGEMENTS BEHIND THE HEADLINES

2:30 pm

Mitchell Winter, *Visual Studies*

ADORNING REALITY: THE POSTCOLONIAL POETICS AND PROBLEMS
OF ALANKARA IN CONTEMPORARY CULTURAL STUDIES OF HINDU VISUALITY

Sean Lawrence, *History*

BEGRUDGING EMPIRE: BANKERS, BOURGEOIS SOCIETY,
AND IMPERIAL GERMANY'S NEW PUBLIC ELITE

Christina Corfield, *Film & Digital Media*

INSTANT MESSENGER: THE PONY EXPRESS, MEDIA AND MODERN VIRTUALITY
BEFORE THE AGE OF THE INTERNET

Lisa Beebe, *Music*

FROM OLD HANOI TO THE "HOTEL CALIFORNIA":
THE TRAVELING TALES OF THE VIETNAMESE DAN BAU MONOCHORD

Kyuhyun Han, *History*

PRECIOUS ANIMALS: STATE-WILDLIFE RELATIONS
IN THE PEOPLE'S REPUBLIC OF CHINA, 1949-1965

Oral/Live Presentations

Presentation Room 3
Library 2359

1:30 pm

Daniel Killam, *Earth Sciences*

HAPPY CLAMS THROUGH TIME: USING BIVALVE SHELLS
AS A RECORD OF PHYSIOLOGY AND CLIMATE

Courtenay Ray, *Ecology & Evolutionary Biology*

INVADING CALIFORNIA: IMPACTS AND BEST MANAGEMENT PRACTICES
FOR THE PERENNIAL GRASS, EHRHARTA ERECTA

Claire Masteller, *Earth Sciences*

HIGHS AND LOWS OF RIVERBEDS: QUANTIFYING THE IMPACT
OF GRAIN-SCALE TOPOGRAPHY ON SEDIMENT TRANSPORT RATES
IN AN EXPERIMENTAL RIVER

Juliano Calil, *Ocean Sciences*

MULTIDISCIPLINARY APPROACHES TO COASTAL CLIMATE ADAPTATION

2:30 pm

Carolyn Branecky, *Earth Sciences*

GEOTHERMAL HEAT FLOW IN THE WEST ANTARCTIC RIFT SYSTEM

Joseph Parks, *Chemistry & Biochemistry*

MOLECULAR MOTION CAPTURE OF HUMAN TELOMERASE CATALYSIS

Leah Schwiesow, *Molecular, Cell, & Developmental Biology*

ISCR-MEDIATED CONTROL OF THE HMURSTUV HEMIN UPTAKE SYSTEM
IN YERSINIA PSEUDOTUBERCULOSIS

Mauricio Rojas-Andrade, *Chemistry & Biochemistry*

ANTIBACTERIAL ACTIVITY OF SILVER-COPPER ALLOY NANOPARTICLES:
IN-VIVO EVIDENCE FOR REACTIVE OXYGEN SPECIES GENERATION

Cassidy Berk, *Electrical Engineering*

SELECTIVE CONTROL OF MAGNETIZATION PRECESSION
IN MAGNETIC MULTILAYERS

Poster Presentations

Alphabetical by program and last name

David Haan, *Biomolecular Engineering & Bioinformatics*

IDENTIFYING NOVEL DRIVER GENES OF THE ALTERNATIVE LENGTHENING OF TELOMERES PATHWAY IN PEDIATRIC CANCER

Yulia Newton, *Biomolecular Engineering & Bioinformatics*

UCSC TUMORMAP: EXPLORING CANCER SIGNATURES ON AN INTERACTIVE DYNAMIC LANDSCAPE

Arthur Rand, *Biomolecular Engineering & Bioinformatics*

CYTOSINE METHYLATION VARIANT CALLING WITH MINION NANOPORE SEQUENCING

Edward Rice, *Biomolecular Engineering & Bioinformatics*

HIGHLY-CONTIGUOUS GENOME ASSEMBLY AND RNA-SEQ OF EMBRYONIC GONADS PROVIDE EVIDENCE OF ESTROGENIC REGULATION OF GENE EXPRESSION DURING TEMPERATURE-DEPENDENT SEX DETERMINATION IN THE AMERICAN ALLIGATOR

Nedda Saremi, *Biomolecular Engineering & Bioinformatics*

BEAR NECESSITIES: THE GENOME ASSEMBLY AND ANNOTATION OF THE SPECTACLED BEAR

Staci Adams, *Chemistry & Biochemistry*
OPTICAL AND MAGNETIC PROPERTIES OF METAL AND METAL-OXIDE NANOPARTICLES FOR BIOLOGICAL APPLICATIONS

Tianyu Liu, *Chemistry & Biochemistry*
FIRST DEMONSTRATION OF 3D PRINTED PERIODIC MACROPOROUS GRAPHENE AEROGELS AS SUPERCAPACITOR ELECTRODES WITH EXCEPTIONAL RATE CAPABILITY

Bin Yao, *Chemistry & Biochemistry*
FLEXIBLE TRANSPARENT SEMICONDUCTOR NANOPAPER FOR ENERGY STORAGE

Daniel Alves, *Computer Engineering*
TEMPORAL AND GEOGRAPHICAL INFLUENCE IN RTT PATTERNS

Jun Chai, *Computer Engineering*
HYBRID CONTROL ALGORITHMS FOR ROBUST POWER CONVERSION IN SMART GRIDS

Sam Mansfield, *Computer Engineering*
WIRELESS COMMUNICATION OVER TERRAIN

Sean Phillips, *Computer Engineering*
ESTIMATION AND SYNCHRONIZATION FOR MULTI-AGENT SYSTEMS USING TOOLS FOR HYBRID SYSTEMS
Co-presenter: Yuchen Li

Sharon Rabinovich, *Computer Engineering*
LEADER-FOLLOWER FOR FORMATION TESTING

Dmitriy Rivkin, *Computer Engineering*
MINIMUM ENERGY ATTITUDE CONTROL

Sean-Ryan Smith, *Computer Science*
DYNAMIC ONLINE COMPUTERIZED NEUROPSYCHOLOGICAL TESTING SYSTEM

Cara Vennari, *Earth Sciences*
HIGH PRESSURE RAMAN AND SINGLE CRYSTAL X-RAY DIFFRACTION OF THE ALKALI/CALCIUM CARBONATE, SHORTITE

Eric Garcia, *Ecology & Evolutionary Biology*
GENOMIC ANALYSIS OF DISJUNCT MARINE FISH POPULATIONS OF THE NORTHEASTERN PACIFIC AND SEA OF CORTEZ

Poster Presentations

Alphabetical by program and last name

Juan Diaz, *Electrical Engineering*
HIERARCHICAL MOTH-EYE ANTIREFLECTION
COATINGS

David Fryauf, *Electrical Engineering*
GROWTH OF ULTRASMooth SILVER THIN
FILMS DEPOSITED WITH A GERMANIUM
NUCLEATION LAYER
Co-presenter: Juan Diaz

Paulo Quadri, *Environmental Studies*
NO WALLS BETWEEN CONIFERS IN MEXICO:
HOW LOCAL ENVIRONMENTAL CONDITIONS
MODULATE DISTRIBUTIONAL AND
PHYSIOLOGICAL RESPONSES OF TREES TO
CLIMATE CHANGE IN ALPINE MEXICO

Meg Eppel Gudgeirsson, *History*
DEFINE THE CHILD, DEFINE THE
COMMUNITY: RAISING CHILDREN IN
NINETEENTH-CENTURY RELIGIOUS
COMMUNITIES

Martin Rizzo, *History*
NO SOMOS ANIMALES: INDIGENOUS
SURVIVAL AND PERSISTENCE IN 19TH
CENTURY SANTA CRUZ, CALIFORNIA

Amanda Wilson Bergado, *History*
RECONSIDERING "THE HATCHET MEN":
CHINESE AMERICAN CRIMINALITY DURING
THE ERA OF CHINESE EXCLUSION

Delio Vasquez, *History of Consciousness*
THE REVOLUTION WILL NOT BE LEGALIZED:
BANK ROBBERIES, EXPROPRIATIONS, AND
THE BLACK LIBERATION ARMY (1968-1983?)

Nathaniel Clair, *Linguistics*
AN ENRICHED ACCOUNT OF DIFFERENTIAL
OBJECT MARKING: EVIDENCE FROM
SPOKEN PERSIAN

Anna Greenwood, *Linguistics*
PHONETICS OR PHONOLOGY?
INVESTIGATING THE DRIVING FORCE BEHIND
PHONETICALLY NATURAL PATTERNS

Chelsea Miller, *Linguistics*
LIMITED REACTIVATION IN NOUN PHRASE
ELLIPSIS

Maho Morimoto, *Linguistics*
LISTENER ADAPTATION TO STRESS
MISPLACEMENT IN ENGLISH

Jason Ostrove, *Linguistics*
THE PLACEMENT OF AGREEMENT CLITICS IN
SAN MARTÍN PERAS MIXTEC

Jed Pizarro-Guevara, *Linguistics*
THE ROLE OF TAGALOG VERBAL AGREEMENT
IN PROCESSING WH-DEPENDENCIES

Erik Zyman, *Linguistics*
ON THE LIMITS OF SYNTACTIC MOVEMENT:
HYPERRAISING IN P'URHEPECHA

Kendra Dority, *Literature*
READING PRACTICES AND LANGUAGE
POLITICS IN ANCIENT GREEK AND U.S.
LATINA/O LITERATURES

Tsering Wangmo, *Literature*
THE RECONSTRUCTION OF CONTEMPORARY
TIBETAN IDENTITY: TRADITION,
NATIONALISM, AND FORMS OF BELONGING

Travis Conley, *Microbiology & Environmental
Toxicology*
MANGANESE AND THE BRAIN: IMPACTS OF
DEVELOPMENTAL MANGANESE EXPOSURE
ON CATECHOLAMINERGIC RECEPTORS IN
THE PREFRONTAL CORTEX

Poster Presentations

Alphabetical by program and last name

Jaime Hernandez, *Microbiology & Environmental Toxicology*
PHOTOARSENOTROPHY IN ACTION

Zeka Kuspa, *Microbiology & Environmental Toxicology*
MEASURING HANDLING STRESS AT MULTIPLE TIME SCALES IN THE CHRONICALLY LEAD-EXPOSED CALIFORNIA CONDOR

Gisele Miglioranza Rizzi, *Microbiology & Environmental Toxicology*
SKELETAL LEAD: IMPLICATIONS FOR EXPOSURE MONITORING IN CALIFORNIA CONDORS

Elektra Robinson, *Molecular, Cell, & Developmental Biology*
CHARACTERIZATION OF LncRNA-Aim2 IN MOUSE MACROPHAGES

Cameron Soulette, *Molecular, Cell, & Developmental Biology*
PAN-CANCER ANALYSIS OF WHOLE GENOME SEQUENCING REVEALS RECURRENT INTRONIC MUTATIONS

Leila Jewell, *Physics*
PROGRESS TOWARD THE SOLAR PANELS OF TOMORROW: LOCAL STRUCTURE STUDIES OF DEGRADATION IN THE PROMISING LEAD IODIDE PEROVSKITE

Caitlin Johnson, *Physics*
SEARCHING FOR SIGNATURES OF NEW PHYSICS: DEEP GAMMA-RAY OBSERVATIONS OF 3C 66A

Shirin Bakhshay, *Psychology*
THE MEDIA'S IMPACT ON THE RIGHT TO A FAIR TRIAL: A CONTENT ANALYSIS OF PRE-TRIAL PUBLICITY IN CAPITAL CASES

Brandon Balzer Carr, *Psychology*
QUEER SLUGS: A QUALITATIVE ANALYSIS OF LGBTQ+ STUDENTS' CHALLENGES AND COMMUNITY BUILDING AT UCSC

Natalie Jacewicz, *Science Communication*
POLITICS IN A PETRI DISH: COVERING NATIONAL ELECTIONS THROUGH SCIENCE COMMUNICATION

Nadia Roche, *Sociology*
IMPACTS OF SEXUAL ASSAULT TRAUMA AND MENTAL HEALTH ON GRADUATE STUDENT ACADEMIC SUCCESS

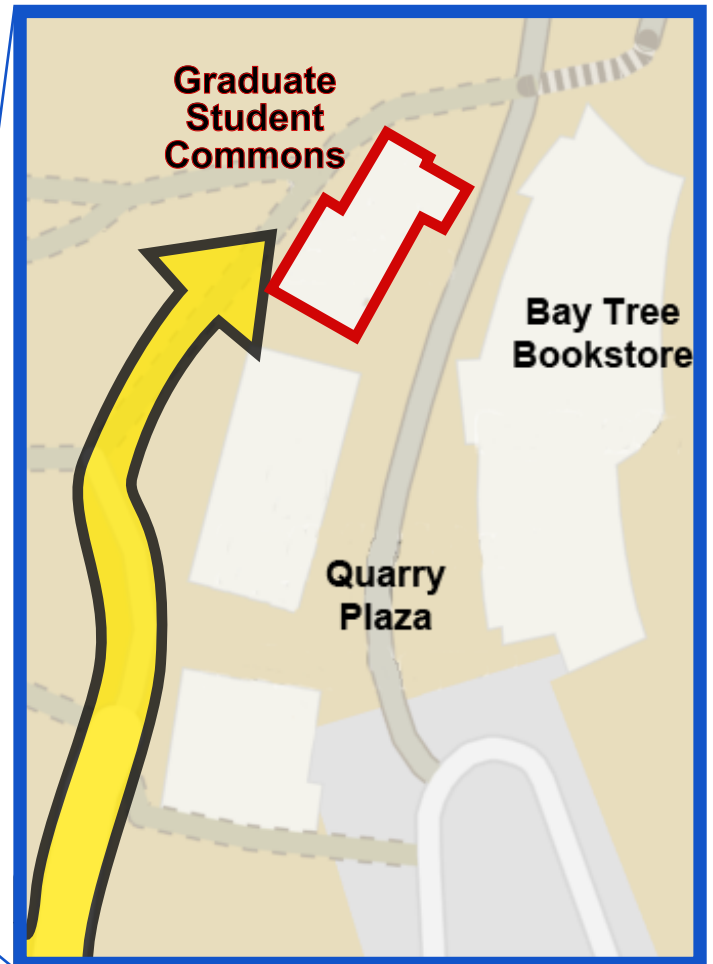
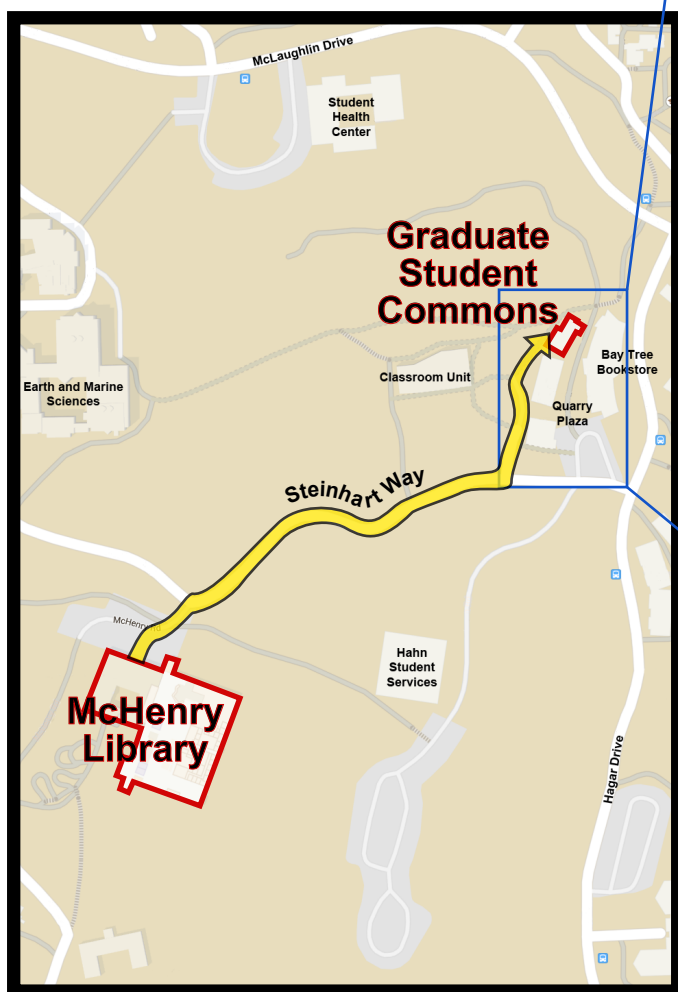
Daniel Helkey, *Statistics & Applied Mathematics*
BAYESIAN DECISION - THEORETIC SAMPLE SIZE COMPUTATION

Daniel Kirsner, *Statistics & Applied Mathematics*
THE JAYNES INFORMATION CRITERION (JIC) AND THE ROLE OF PARSIMONY IN BAYES FACTORS

Alexander Terenin, *Statistics & Applied Mathematics*
ASYNCHRONOUS GIBBS SAMPLING

Alex Moore, *Visual Studies*
READING NATURE, OBSERVING SCIENCE: EXAMINING MATERIAL PRACTICES IN THE KENNETH S. NORRIS AND LICK OBSERVATORY PAPERS
Co-presenters: Christine Turk and Danielle Crawford

Walking Map to Graduate Student Commons



Graduate alumni and current graduate students are invited to the Graduate Student Commons from 5 - 7 pm for the Graduate Alumni Social. Come meet new friends, reconnect with old friends, and learn more about the GSC while enjoying a refreshing cocktail. Drinks and appetizers will be provided.

